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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/567,638

06/14/2006

Jonathan Upfal

1557-6 PCT/US

1309

23869 7590 09/30/2009
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EXAMINER

CHEN, CATHERYNE

ART UNIT

PAPER NUMBER

1655

MAIL DATE

DELIVERY MODE

09/30/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/567,638 | Applicant(s) UPFAL ET AL. | |
| | Examiner CATHERYNE CHEN | Art Unit 1655 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 and 56-60 is/are pending in the application.
- 4a) Of the above claim(s) 5-8, 14, 18, 31-34, 41 and 361 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-13, 15-17, 19-30, 35-40, 42-44 and 56-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Currently, Claims 1-44, 56-60 are pending. Claims 1-4, 9-13,15-17, 19-30,35-40,42-44 and 56-60 are examined on the merits. Claims 45-55 are canceled.

Election/Restrictions

Applicant's election of Group I (Claims 1-33, 35-44, 56-60), the species single species of ionic liquid, substituted phenyl organic acid anion, substituted imidazolium, substituted imidazolium salt of a substituted aryl sulfonate, lignocellulostic residue of sugar in the reply filed on May 13 and 25, 2009 is acknowledged. Claim 34 is further withdrawn because it is a product, which is not elected. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 5-8, 14, 18, 31-34, 41 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group and species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 13 and 25, 2009.

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 19-30, 35, 39-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilder (US 3632469).

Wilder teaches a process for producing a highly polymerized dissolving grade pulp from vegetable matter by removing lignin and hemicellulose (Claim 1) where the vegetable matter is pretreated with sodium xylene sulfonate (Claim 2). Sodium xylene sulfonate is a single species of ionic liquid. Sodium is a cation. Sulfonate is an anion. The pretreated vegetable matter is washed with water caustic material at 50-75 degree Celsius (Claim 3, f) for 4 hours (Claim 3, h) to get the pulp (Claim 3, n). Vegetable matter would contain lignin and cellulose and sugar.

Claims 1-4, 9-13, 19-24, 29-30, 35-40, 56-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Csiszar et al. (1995, Cellulose Chemistry and Technology, 29: 143-150).

Csiszar et al. teaches lignin is vegetable impurity in cotton is treated with p-toluenesulfonic acid to effectively remove vegetable residues from cotton (Abstract). P-toluenesulfonic acid is an organic acid that will have substituted aryl organic anion and cation parts. Toluene contains substituted phenyl structure. Vegetable matter would contain lignin and cellulose and sugar.

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Claims 1-4, 9, 15-16, 19-24, 29-30, 35-36, 42-43, 56-57 are rejected under 35 U.S.C. 102(b) as being anticipated by Hutcheson (US 5393334).

Hutcheson teaches composition for papermaking process, where paper is produced from cellulose fibers such as wood pulp (column 1, lines 17-18), with cationic softener base as brightener such as derivatives of imidazole, which includes imidazolium (column 5, lines 66-67). Aminoethylethanolamine comprising the cationic softener base is an organic anion (Claim 2). Vegetable matter would contain lignin and cellulose and sugar.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 1-4, 9-13, 15-17, 19-24, 29-30, 35-40, 42-44, 56-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Csiszar et al. (1995, Cellulose Chemistry and Technology, 29: 143-150) and Sutto et al. (May 4-14, 2001, NATO Advanced Study Institute, Kas, Turkey).

Csiszar et al. teaches lignin a vegetable impurity in cotton is treated with p-toluenesulfonic acid to effectively remove vegetable residues from cotton (Abstract). P-toluenesulfonic acid is an organic acid that will have substituted aryl organic anion and cation parts. Toluene contains substituted phenyl structure. Vegetable matter would contain lignin and cellulose and sugar.

However, it does not teach substituted imidazolium salt of a substituted aryl sulfonate.

Sutto et al. teaches ionic liquid 1-ethyl-3-methylimidazolium substitution of a methyl group for the proton at the C-2 position can increase the electrochemical stability of the imidazolium cation (page 840, left column, lines 1-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the methyl group from the p-toluenesulfonic acid with 1-ethyl-3-methylimidazolium because protonating with 1-ethyl-3-methylimidazolium will stabilize imidazolium. One would have been motivated to make substituted imidazolium salt of a substituted aryl sulfonate for the expected benefit of increasing stability of the imidazolium cation. Absent evidence to the contrary, there would have been a reasonable expectation of success in making the claimed invention from the combined teachings of the cited references.

Conclusion

No claim is allowed.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catheryne Chen whose telephone number is 571-272-9947. The examiner can normally be reached on Monday to Friday, 9-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on 571-272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Catheryne Chen
Examiner Art Unit 1655

/Michael V. Meller/

Primary Examiner, Art Unit 1655